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(37 CFR 1.8)**

Docket Number

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## Title of Invention

**Certificate**

First Named Inventor	Richard G. Morton, et al.
Application No.	U.S. Patent No. 7,339,973
Filing Date	
Examiner	n/a
Art Unit	n/a
Customer No.	21773

**of Correction**

I hereby certify that the following correspondence:

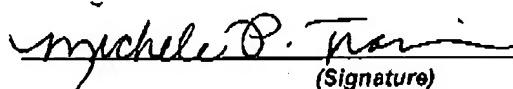
Request For Certificate of Correction Under 37 CFR Section 1.322 (5 pages); Form PTO SB/44 (1 page); Certificate of Transmission by Facsimile (1 page)      TOTAL PAGES 7

(Identify type of correspondence)

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Fax Number: 571-273-8300on: May 25, 2011**Michele P. Travis**

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## CERTIFICATE OF FACSIMILE TRANSMISSION

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Michele P. Travis

(Name)

Michele P. Travis

(Signature)

Atty. Docket No. 2003-0058-01

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent No.: 7,339,973 B2

Issue Date: March 4, 2008

Applicants: Morton, et al.

For: ELECTRODES FOR FLUORINE GAS  
DISCHARGE LASERS

Certificate of Correction Branch  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.322

Dear Sir:

Applicants request correction of the U.S. Patent as follows:

On the Title Page, item (60), please delete the entire paragraph and replace it with the following:

Continuation in part of application No. 10/638,247, filed on August 7, 2003, now US Patent No. 6,937,635, which is a divisional of application No. 10/629,364, filed on July 29, 2003, now US Patent No. 7,132,123, which is a continuation in part of application No. 10/104,502, filed on March 22, 2002, now US Patent No. 6,690,706, which is a continuation-in-part of application No. 10/081,589, filed February 21, 2002, now abandoned, which is a continuation-in-part of application 09/953,026, filed on September 13, 2001, now US Patent No. 6,711,202.

Atty Docket No. 2003-0058-01  
USPN 7,339,973

## REMARKS

Applicants submitted a REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.322 on April 19, 2011. The USPTO denied the request due to "The applicant has not previously claimed that the instant application is a CIP of 10/638,247, and 10/638,247 is not a continuation of 10/629,364. [I]t is a divisional of 10/629,364".

Applicants respectfully submit page 1 of the specification as filed on the patent application filing date (September 26, 2003), which states "This application is a continuation in part of . . . ;United States Patent Application Ser. No. 10/638,247, entitled HIGH REP-RATE LASER WITH IMPROVED ELECTRODES, filed August 7, 2003;..."

Accordingly, it is respectfully submitted that Applicants have made a proper priority claim of the instant application as a CIP of 10/638,247 earlier.

It is further noted that U.S. Patent Application Ser. No. 10/638,247 is a divisional of U.S. Patent Application Ser. No. 10/629,364. A copy of the first page of U.S. Patent No. 6,937,635 is enclosed herewith, showing that that U.S. Patent Application Ser. No. 10/638,247 is a divisional of U.S. Patent Application Ser. No. 10/629,364.

Enclosed is Form PTO-1050 requesting correction of the above-referenced U.S. Patent. This Request for Certificate of Correction is believed to be due to a typographical error that is believed to be the fault of the PTO. Therefore no fee is believed due.

In the alternative, if the USPTO believes that the error is not due to the fault of the USPTO, Applicants respectfully submit that the error arises in good faith and the correction of the error does not constitute new matter or require a re-examination.

Atty Docket No. 2003-0058-01  
USPN 7,339,973

The Commissioner is authorized to charge any fee due (including the Certificate of Correction fee under 1.20(a) if the USPTO believes that the error is not due to the fault of the USPTO) or credit any overpayment to Deposit Account No. 03-4060.

Respectfully submitted,

/Joseph A. Nguyen/  
Joseph Nguyen, Reg. No. 37,899

May 25, 2011  
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**PATENT APPLICATION**  
**CYMER Docket No.: 2003-0058-01**

**ELECTRODES FOR FLUORINE GAS DISCHARGE LASERS**

5

**RELATED CASES**

This application is a continuation in part of United States Patent Application, Ser. No. 09/953,026, filed on September 13, 2001, entitled DISCHARGE LASER WITH POROUS INSULATING LAYER COVERING ANODE DISCHARGE SURFACE, with inventors Morton, et al., published on May 2, 2002, Pub. No. US20020051478 A1; United States Patent Application Ser. No. 10/081,589, entitled ELECTRIC DISCHARGE LASER WITH TWO-MATERIAL ELECTRODES, filed on February 21, 2002, with inventors Morton et al., published on October 24, 2002, Pub. No. US2002015467A1; United States Patent Application Ser. No. 10/104502, entitled HIGH REP-RATE LASER WITH IMPROVED ELECTRODES, filed on March 22, 2002, with inventors Morton, et al., published on December 19, 2002, with Pub. No. US20020191661A1; United States Patent Application Ser. No. 10/629,364, entitled HIGH REP-RATE LASER WITH IMPROVED ELECTRODES, filed July 29, 2003; United States Patent Application Ser. No. 10/638,247, entitled HIGH REP-RATE LASER WITH IMPROVED ELECTRODES, filed August 7, 2003; the disclosures of all of the above being hereby incorporated by reference.

This case is also related to Attorney Docket Nos. 2003-0048, entitled "ANODES FOR FLUORINE GAS DISCHARGE LASERS," and attorney Docket No. 2003-0067, entitled "CATHODES FOR FLUORINE GAS DISCHARGE LASERS," filed on the same day as this application and assigned to the common assignee of this application, the disclosures of which are hereby incorporated by reference.

**FIELD OF THE INVENTION**

The field of the invention relates to electrodes and electrode systems for fluorine gas discharge lasers.



US006937635B2

(12) **United States Patent**  
**Morton et al.**

(10) Patent No.: US 6,937,635 B2  
(45) Date of Patent: Aug. 30, 2005

(54) **HIGH REP-RATE LASER WITH IMPROVED ELECTRODES**

(75) Inventors: Richard G. Morton, San Diego, CA (US); Timothy S. Dyer, Oceanside, CA (US); Thomas D. Steiger, San Diego, CA (US); Richard C. Ujazdowski, Poway, CA (US); Tom A. Watson, Carlsbad, CA (US); Bryan Moosman, San Diego, CA (US); Alex P. Ivaschenko, San Diego, CA (US); Walter Gillespie, San Diego, CA (US); Curtis Rettig, Vista, CA (US)

(73) Assignee: Cymer, Inc., San Diego, CA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 131 days.

(21) Appl. No.: 10/638,247

(22) Filed: Aug. 7, 2003

(65) Prior Publication Data

US 2004/0037338 A1 Feb. 26, 2004

**Related U.S. Application Data**

(60) Division of application No. 10/629,364, filed on Jul. 29, 2003, which is a continuation of application No. 10/104,502, filed on Mar. 22, 2002, now Pat. No. 6,690,706, which is a continuation-in-part of application No. 10/081,589, filed on Feb. 21, 2002, now abandoned, which is a continuation-in-part of application No. 09/953,026, filed on Sep. 13, 2001, now Pat. No. 6,711,202, which is a continuation-in-part of application No. 09/776,044, filed on Feb. 1, 2001, now Pat. No. 6,584,132, which is a continuation-in-part of application No. 09/768,753, filed on Jan. 23, 2001, now Pat. No. 6,414,979, which is a continuation-in-part of application No. 09/742,485, filed on Dec. 20, 2000, now abandoned, which is a continuation-in-part of application No. 09/703,697, filed on Nov. 1, 2000, now Pat. No. 6,363,094, which is a continuation-in-part of application No. 09/590,958, filed on Jun. 9, 2000, now Pat. No. 6,560,263, which is a continuation-in-part of application No. 09/590,961, filed on Jun. 9, 2000, now Pat. No. 6,466,602.

(51) Int. Cl. <sup>7</sup> ..... H01S 3/20; H01S 3/22; H01S 3/097; H01S 3/09

(52) U.S. Cl. ..... 372/55; 372/57; 372/58; 372/87; 372/90

(58) Field of Search ..... 372/34, 36, 38.04, 372/38.05, 55, 56, 57, 58, 59, 60, 61, 81, 82, 85, 86, 87, 90

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

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(Continued)

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**OTHER PUBLICATIONS**

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*Primary Examiner*—Minsun Oh Harvey

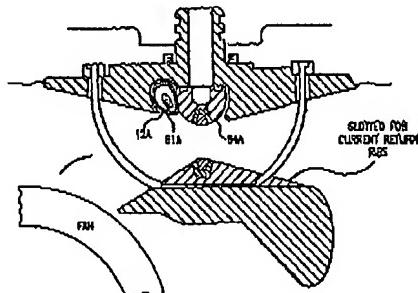
*Assistant Examiner*—Armando Rodriguez

(74) *Attorney, Agent, or Firm*—William C. Cray, Cymor, Inc.

(57) **ABSTRACT**

The present invention provides a gas discharge laser having at least one long-life elongated electrode for producing at least 12 billion high voltage electric discharges in a fluorine containing laser gas. In a preferred embodiment at least one of the electrodes is comprised of a first material having a relatively low anode erosion rate and a second anode material having a relatively higher anode erosion rate. The first anode material is positioned at a desired anode discharge region of the electrode. The second anode material is located adjacent to the first anode material along at least two long sides of the first material. During operation of the laser erosion occurs on both materials but the higher erosion rate of the second material assures that any tendency of the discharge to spread onto the second material will quickly erode away the second material enough to stop the spread of the discharge. In a preferred embodiment the anode is as described above and the cathode is also a two-material electrode with the first material at the discharge region being C26000 brass and the second material being C36000 brass. A pulse power system provides electrical pulses at rates of at least 1 KHz. A blower circulates laser gas between the electrodes at speeds of at least 5 m/s and a heat exchanger is provided to remove heat produced by the blower and the discharges.

16 Claims, 20 Drawing Sheets



MODIFIED PTO/SB/44 (02-01)

Approved for use through 01/31/2004. OMB 0651-0033

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(Also Form PTO-1060)**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION****PATENT NO :** 7,339,973**DATED :** March 4, 2008**INVENTOR(S) :** Richard G. Morton, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page, item (60), please delete the entire paragraph and replace it with the following:

-- Continuation in part of application No. 10/638,247, filed on August 7, 2003, now US Patent No. 6,937,635, which is a divisional of application No. 10/629,364, filed on July 29, 2003, now US Patent No. 7,132,123, which is a continuation in part of application No. 10/104,502, filed on March 22, 2002, now US Patent No. 6,690,708, which is a continuation-in-part of application No. 10/081,589, filed February 21, 2002, now abandoned, which is a continuation-in-part of application 09/953,026, filed on September 13, 2001, now US Patent No. 6,711,202. --.

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PATENT NO. 7,339,973

/Joseph A. Nguyen/ #37,889  
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